Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**The Biosphere Unit Exam**

**Multiple Choice:** Circle the answer that best answers the question. Each Question is worth 3 points.

1. Ecology is the study of…
   1. The interaction of cells
   2. The interaction of all organisms
   3. The interaction of plants and animals
   4. The interaction of bacteria and their host
2. The combined portion of the planet in which all life exists is the…
   1. Ecosystem
   2. Biome
   3. Atmosphere
   4. Biosphere
3. A \_\_\_\_\_\_\_\_\_\_ is the smallest level of organization.
   1. Species
   2. Population
   3. Community
   4. Ecosystem
4. What is not a common approach used by ecologists?
   1. Observing
   2. Experimenting
   3. Modeling
   4. Surveying
5. In the nitrogen cycle, bacteria that live on the roots of plants…
   1. Break down nitrogen compounds into gas
   2. Denitrify nitrogen compounds
   3. Change nitrogen gas into plant proteins
   4. Change nitrogen gas into ammonia
6. Autotrophs can be considered…
   1. Decomposers
   2. Primary Consumers
   3. Producers
   4. Secondary Consumers
7. The use of chemical energy to produce carbohydrates is…
   1. Photosynthesis
   2. Chemosynthesis
   3. Transpiration
   4. Evaporation
8. Energy stored by producers can be passed through an ecosystem along a…
   1. Food chain
   2. Food web
   3. Energy pyramid
   4. Biomass pyramid
9. What percent of energy is transferred to organisms at the next trophic level?
   1. 5%
   2. 10%
   3. 15%
   4. 20%
10. Which of the following organism is typically a decomposer?
    1. A wolf
    2. A tree
    3. A giraffe
    4. A fungus

**True/False:** Circle either true or false for the following questions. Each question is worth 3 points.

T/F: A community is less complex than a population.

T/F: All producers are photosynthetic.

T/F: Photosynthesis and chemosynthesis are the same process.

T/F: Autotrophs have the ability to produce their own energy.

T/F: Sunlight is the primary energy source on planet Earth.

T/F: Herbivores, carnivores, omnivores and detritivores are all consumers.

T/F: A trophic level can contain more than one step in a food chain.

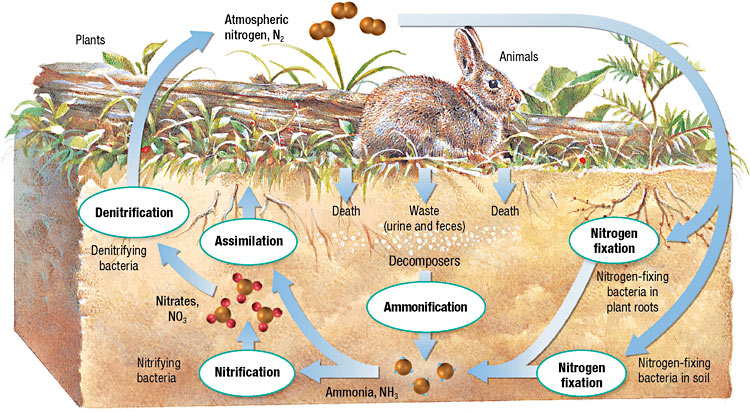
T/F: Matter can be destroyed within and between ecosystems.

T/F: Plants require bacteria to help them use nitrogen in the atmosphere.

T/F: Phosphorous is necessary for life on Earth.

**Fill in the blank:** Fill in the blanks below with the best answer from the word bank. Each blank is worth 2 points.

**Word Bank:** Ammonification, Assimilation, Denitrification, Nitrification, Nitrogen fixation

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**Short answer:** Respond to the prompts below. Each question is worth 6 points.

1. Why do farmers fertilize their crops with nitrogen and phosphorous?
2. What would happen if one of these nutrients were in insufficient amounts?
3. What could happen if these nutrients were introduced into another environment?